

CLAIMS

1. A coating and developing system comprising:
 - a coating unit for coating a surface of a substrate with a resist,
 - a developing unit for processing the substrate by a developing process after exposing the substrate coated with a transparent liquid layer, and
 - a first cleaning means for cleaning the surface of the substrate coated with the resist with a cleaning liquid before exposure.
2. The coating and developing system according to claim 1, wherein the coating unit comprises:
 - a substrate holding device capable of holding the substrate in a horizontal position and of rotating the substrate about a vertical axis,
 - a resist pouring nozzle for pouring the resist onto the surface of the substrate held by the substrate holding device.
3. The coating and developing system according to claim 1, wherein the first cleaning means comprises:
 - a closely closable vessel capable of holding the substrate therein,
 - a substrate support device disposed in the closely closable vessel and capable of holding the substrate in a horizontal position thereon,
 - a cleaning liquid supply means for supplying a cleaning liquid into the closely closable vessel, and
 - a cleaning liquid discharging means for discharging the cleaning liquid.
4. The coating and developing system according to claim 3 further comprising a heating unit for heating the surface of the substrate coated with the resist,
 - wherein the first cleaning means is adjacent to the heating unit.
5. The coating and developing system according to claim 3 or 4 further comprising a drying means for drying the substrate by flowing a dry gas through the closely closable

vessel after the cleaning liquid has been discharged from the closely closable vessel.

6. The coating and developing system according to claim 1, wherein the first cleaning means comprises:

a substrate holding device for holding the substrate in a horizontal position,

a cleaning nozzle provided with pouring openings arranged along the width of the substrate to pour the cleaning liquid onto the surface of the substrate held by the substrate holding device, and suction openings arranged adjacently to the pouring openings on the front and/or the back side of the pouring openings to suck up the cleaning liquid from the surface of the substrate, and

a cleaning nozzle moving means for horizontally moving the cleaning nozzle relative to the substrate holding device.

7. The coating and developing system according to claim 1 or 6, wherein the first cleaning means is provided with a drying means for removing the cleaning liquid remaining on the substrate to dry the substrate.

8. The coating and developing system according to any one of claims 1, 3 and 6 further comprising an interface unit for transferring the substrate coated with the resist to an exposure system and receiving the exposed substrate from the exposure system,

wherein the first cleaning means is included in the interface unit.

9. The coating and developing system according to any one of claims 1, 2, 3, 4 and 6 further comprising a second cleaning means for cleaning the surface of the exposed substrate with a cleaning liquid before subjecting the substrate to a developing process.

10. The coating and developing system according to claim 9, wherein the first cleaning means serves also as the second cleaning means.

11. A coating and developing method comprising:

a coating process for coating a surface of a substrate

with a resist,

a first cleaning process for cleaning the surface of the substrate coated with the resist with a cleaning liquid before exposure,

an exposure process for exposing the surface of the substrate coated with a transparent liquid layer, and

a developing process for developing the exposed surface of the substrate.

12. The coating and developing method according to claim 11, wherein the coating process includes the step of supplying the resist onto the surface of the substrate held in a horizontal position by a substrate holding device, and

the first cleaning process includes the step of pouring a cleaning liquid through a cleaning nozzle onto the surface of the substrate held by the substrate holding device.

13. The coating and developing method according to claim 11, wherein the first cleaning process includes the steps of;

carrying the substrate into a closely closable vessel and holding the substrate in a horizontal position,

cleaning a surface of the substrate by supplying a cleaning liquid into the closely closable vessel, and

discharging the cleaning liquid.

14. The coating and developing method according to claim 13 further comprising the step of drying the substrate by flowing a drying gas through the closely closable vessel after discharging the cleaning liquid from the closely closable vessel.

15. The coating and developing method according to claim 11, wherein the first cleaning process moves horizontally a cleaning nozzle provided with pouring openings through which a cleaning liquid is poured onto the surface of the substrate and sucks the cleaning liquid poured onto the substrate through suction openings arranged adjacently to the pouring openings on the front and/or the back side of the discharge openings.

16. The coating and developing method according to any one of claims 11, 12, 13 and 15 further comprising a drying

process for drying the substrate after the first cleaning process and before the exposure process.

17. The coating and developing method according to claim 11 or 15 further comprising a cleaning process for cleaning the surface of the exposed substrate with a cleaning liquid before the developing process.